CLAIM AMENDMENTS

This listing of the claims will replace all prior versions, and listings, of claims in the application.

1. (Currently amended) A method of identifying a device, the method comprising:

receiving a request to establish a Point to Point Protocol over Ethernet (PPPoE) session on behalf of a Local Area Network (LAN) side device that is a LAN node in a LAN that is in communication with a router;

outputting a PPPoE discovery stage packet that comprises a tag identifying the LAN side device;

receiving a different request to establish a different PPPoE session on behalf of a different LAN side device, the different LAN side device at a different LAN node of the LAN;

outputting a different PPPoE discovery stage packet that comprises a different tag identifying the different LAN side device;

receiving an access concentrator packet responsive to the PPPoE discovery stage packet, the access concentrator packet including the tag;

recognizing the tag in the access concentrator packet;

communicating the tag from the access concentrator packet to the LAN side device;

enabling a Poi`nt to Point Protocol (PPP) session for the LAN side device, the LAN side device that is identified as the requesting device of the PPP session; and

enabling a different Point to Point Protocol (PPP) session for the different LAN side device, the different LAN side device that is identified as the requesting device of the different PPP session.

2. (Original) The method of claim 1, wherein the PPPoE discovery stage packet comprises a PPPoE Active Discovery Initiation packet.

3. (Original) The method of claim 1, further comprising maintaining information associating the LAN side device with the tag and the different LAN side device with the different tag.

4-5. (Canceled).

6. (Previously presented) The method of claim 1, wherein the access concentrator packet comprises a PPPoE Active Discovery Offer packet and comprises the tag in an unmodified form.

7. (Original) The method of claim 1, wherein the tag complies with a Host-Uniq TAG construct described in IETF RFC 2516.

8. (Original) The method of claim 1, further comprising utilizing a PPPoE client executing at a node at least partially interconnecting a LAN to a wide area network node to generate the PPPoE discovery stage packet.

9. (Canceled).

10. (Previously presented) The method of claim 1, further comprising disabling a Network Address Translation feature in connection with the PPP session.

11. (Original) The method of claim 1, further comprising receiving the request via a connection type selected from the group consisting of an Ethernet Link, an 802.11(x) link, a Bluetooth link, a Universal Serial Bus Link, and a powerline networking link.

12. (Original) The method of claim 1, further comprising utilizing a modem device to output the PPPoE discovery stage packet, wherein the modem device is selected from the group consisting of an xDSL modem, a cable modem, a fixed wireless modem and a satellite modem.

13. (Previously presented) The method of claim 12, further comprising:
utilizing the modem device to output the PPPoE discovery stage packet and the different
       PPPoE discovery stage packet; and
communicatively coupling the modem device and a plurality of other modem devices to
       an access concentrator node of a wide area network.

14. (Currently amended) A device identification system, comprising:

an access concentrator having a computing platform and an interface operable to facilitate

a communicative coupling of a plurality of remote devices to the computing

platform, wherein the access concentrator includes one of:

a cable modem termination system; and

a digital subscriber line access multiplexer;

a second interface communicatively coupled to the computing platform and operable to

facilitate an outputting of a collection of information representing a PPP session

of a first of the plurality of remote devices and a different PPP session of a

different one of the plurality of remote devices; and

a Local Area Network (LAN) engine communicatively coupled to the interface and

configured to recognize an identification tag in a packet included in a discovery

stage of the PPP session, the identification tag identifying a subscriber LAN

device communicating the packet via the first of the plurality of remote devices,

wherein the subscriber LAN device is a LAN side device that is a LAN node in a

LAN that is in communication with a router and is identified as the requesting

device of the PPP session, and wherein the LAN engine is configured to recognize

a different identification tag in a different packet included in a discovery stage of

the different PPP session that identifies a different subscriber LAN device

communicating the different packet via a different one of the plurality of remote

devices and is a LAN side device that is a different LAN node in the LAN and is

identified as the requesting device of the different PPP session; and

wherein the LAN engine is at least partially embodied by a processor accessing a

computer-readable medium having computer-readable instructions and executing

the computer-readable instructions to recognize an existence of the tag, to identify

device identification information contained in the tag, and to update a memory

associated with a Broadband Remote Access Server to acknowledge the device

identification information.

U.S. App. No.: 10/791,359

15. (Original) The system of claim 14, wherein the tag complies with a Host-Uniq TAG construct described in IETF RFC 2516.

16. (Canceled).

17. (Original) The system of claim 14, further comprising the first of the plurality of remote devices, wherein the first of the plurality of remote devices comprises an xDSL modem.

18-19.(Canceled).

20. (Previously presented) The system of claim 14, wherein the Broadband Remote Access Server is communicatively coupled to the LAN engine and operable to maintain information representing the subscriber LAN device.

21. (Currently amended) A method of identifying remote devices, comprising:

receiving a PPPoE packet from a remote node;

recognizing that the PPPoE packet comprises a tag including information associated with
a device communicating via the remote node, <u>wherein the device and a different</u>
<u>device are distinct LAN nodes in a LAN and are in communication with a router,</u>
<u>wherein the device is identified as communicating via the remote node and</u>
<u>requesting a Point to Point Protocol (PPP) session,</u> wherein the device is selected
from a group consisting of:

> a computer;
>
> a wireless access point;
>
> a Universal Serial Bus Device;
>
> a Voice over Internet Protocol Telephone;
>
> a television;
>
> a set-top box;
>
> a refrigerator;
>
> a washing machine; and
>
> a home networking device;

receiving another PPPoE packet from the remote node;

recognizing that the other PPPoE packet comprises a different tag including other
information associated with a <u>the</u> different device communicating via the remote
node<u>, wherein the different device is identified as communicating via the remote</u>
<u>node and requesting a different PPP session</u>; and

providing a broadband link at least partially interconnecting a communication network
node and the remote node.

22. (Original) The method of claim 21, further comprising:

associating the remote node with a subscriber; and

maintaining subscriber information comprising an identification of the device and the
different device.

23. (Canceled).

24. (Original) The method of claim 21, wherein the PPPoE packet comprises a PPPoE Active Discovery Initiation (PADI) packet.

25. (Previously presented) The method of claim 22, further comprising:
altering a cost of using the broadband link in response to recognizing an additional device communicating with the communication network node via the remote node.

26. (Previously presented) The method of claim 22, further comprising:
considering the subscriber information in connection with generating a marketing offer presentable to the subscriber.

27. (Previously presented) The method of claim 22, further comprising:
considering the subscriber information in connection with making a communication network planning decision.

28. (Previously presented) The method of claim 22, further comprising:
receiving a trouble-shooting request from the subscriber; and
considering the subscriber information in connection with offering a suggestion responsive to the trouble-shooting request.

29. (Original) The method of claim 21, wherein the communication network node comprises a Broadband Remote Access Server.

30. (Canceled).

31. (Original) The method of claim 21, wherein the tag comprises a sixteen bit tag

32. (Original) The method of claim 21, wherein the tag comprises with a Host-Uniq TAG construct described in IETF RFC 2516.